

Species Listing PROPOSAL Form:
Listing Endangered, Threatened, and Special Concern Species in Massachusetts

Scientific name: *Utricularia striata*

Current Listed Status (if any): **Threatened**

Common name: **Fibrous Bladderwort**

Proposed Action:

 Add the species, with the status of :

 X Remove the species

 Change the species' status to:

Change the scientific name to:

Change the common name to:

(Please justify proposed name change.)

Proponent's Name and Address:

Melissa Dow Cullina, Botanist
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Association, Institution or Business represented by proponent: **NHESP**

Proponent's Signature:

Date Submitted: **January 4, 2008**

Please submit to: Natural Heritage & Endangered Species Program, Massachusetts Division of Fisheries & Wildlife, 1 Rabbit Hill Road, Westborough, MA 01581

Justification

Justify the proposed change in legal status of the species by addressing each of the criteria below, as listed in the Massachusetts Endangered Species Act (MGL c. 131A) and its implementing regulations (321 CMR 10.00), and provide literature citations or other documentation wherever possible. Expand onto additional pages as needed but make sure you address all of the questions below. The burden of proof is on the proponent for a listing, delisting, or status change.

- (1) Taxonomic status.** Is the species a valid taxonomic entity? Please cite scientific literature.

Utricularia striata Le Conte *ex* Torr. is a valid taxonomic entity. It was first described in 1824 (Ann. Lyceum Nat. Hist. New York i. 75). Our Massachusetts plant material was formerly listed under the name *Utricularia fibrosa* Britt., however, monographer P. Taylor (1989) has placed the name *U. fibrosa* in synonymy under *U. striata*.

- (2) Recentness of records.** How recently has the species been conclusively documented within Massachusetts?

Contrary to its current listing status (Threatened), and based on a review of the public herbaria known to harbor the most Massachusetts collections, this taxon is not known to have been collected in Massachusetts since

1896. Based on the lengthy efforts described below, NHESP proposes to remove *U. striata* from the MESA list because we cannot confirm that it has been observed or collected in Massachusetts in the past 25 years.

The Fibrous Bladderwort is an aquatic species primarily of muddy to boggy, shallow waters of the coastal plain. Massachusetts is at the northeastern extent of its range. Field surveys conducted by NHESP and Cape Cod National Seashore (CCNS) botanists raised suspicion about the identification of this species at several coastal plain pond shore locations. Accordingly, a review of all voucher specimens and field sites (where no voucher existed) for this Threatened species was undertaken by staff botanist Melissa Dow Cullina, Arthur Haines of the Herbarium Recovery Project of the New England Wild Flower Society, and volunteers of the New England Conservation Program (NEPCoP).

Our research into the diagnostic characters (leaf and corolla morphology) of Massachusetts voucher specimens at the Harvard University Herbaria (GH and NEBC) and University of Massachusetts (MASS) revealed that nearly all of the voucher specimens were mis-determined by the original collectors. Nearly all Massachusetts specimens were annotated by Haines or Cullina to the more common *U. gibba*, since all but three specimens failed to exhibit the dimorphic leaves and relatively long, conic nectar spurs characteristic of *U. fibrosa* (see Taylor, 1989). Of the three remaining voucher specimens, all were collected in historical times (two from 1896 in Hyannis and one from 1925 in Falmouth). The Falmouth material is only questionable, according to Haines, showing only “a weak dimorphism” and a “short, thick spur” (Herbarium Recovery Project, 2002). Field surveys on two dates by NEPCoP volunteers Pamela Polloni, Nancy Wigley, and Dick Backus failed to locate *U. striata* there in 2003.

The two remaining, *bona fide* collections of *U. striata* occurred on successive days (4 and 5 July) in 1896 by different collectors in Hyannis. The close proximity of the dates suggest that perhaps the collectors (Churchill and Burdic) communicated about the taxon and its unspecified location. Despite intense floristic attention to the coastal plain ponds of Hyannis by historical botanists such as M.L. Fernald and B. Long, as well as modern botanists of NHESP, TNC, and NEPCoP, no one has documented *U. striata* in Hyannis since 1896.

Two separate, unvouchered stations of this plant were recorded by the same surveyor in 1985 at coastal plain ponds in Truro. Although there are no vouchers to examine, the original surveyor provided NHESP with detailed documentation of morphological measurements. These notes, present in the NHESP element occurrences records, indicate that the floral nectar spur of the plants at both stations were only half as long as the lower lips of the flowers (as in *U. gibba*), allowing Cullina to rule out the possibility that these observations were of *U. striata* (which has nectar spurs “about as long as the lower petal” (Taylor, 1986)). In addition, three recent surveys at each of these two stations by CCNS botanists have failed to locate *U. striata*.

This detailed review of *Utricularia striata* voucher specimens and field sites indicates that listing *U. striata* as Threatened is inappropriate since it has not been documented in Massachusetts since 1896. This taxon should be removed from the MESA list and categorized as “Historical” (SH).

NOTE: A PORTION OF THE DATA PRESENTED HEREIN WAS COLLECTED DURING MUSEUM SURVEYS FOR THE HERBARIUM RECOVERY PROJECT. THIS RESEARCH PROJECT, FUNDED BY THE STRATFORD FOUNDATION AND ELLIS L. PHILLIPS FOUNDATION, HAS COLLECTED INFORMATION FOR A SET OF REGIONALLY RARE AND/OR POORLY KNOWN NATIVE PLANTS TO ENABLE BETTER-INFORMED CONSERVATION EFFORTS. THE DATA WAS USED WITH PERMISSION BY THE NEW ENGLAND WILD FLOWER SOCIETY.

(3) **Native species status.** Is the species indigenous to Massachusetts?

(4) **Habitat in Massachusetts.** Is a population of the species supported by habitat within the state of Massachusetts?

(5) **Federal Endangered Species Act status.** Is the species listed under the federal Endangered Species Act? If so, what is its federal status (Endangered or Threatened)?

(6) **Rarity and geographic distribution.**

(a) Does the species have a small number of occurrences (populations) and/or small size of populations in the state? Are there potentially undocumented occurrences in the state, and if so, is it possible to estimate the potential number of undocumented occurrences?

(b) What is the extent of the species' entire geographic range, and where within this range are Massachusetts populations (center or edge of range, or peripherally isolated)? Is the species a state or regional endemic?

(7) **Trends.**

(c) Is the species decreasing (or increasing) in state distribution, number of occurrences, and/or population size? What is the reproductive status of populations? Is reproductive capacity naturally low? Has any long-term trend in these factors been documented?

(8) **Threats and vulnerability.**

(d) What factors are driving a decreasing trend, or threatening reproductive status in the state? Please identify and describe any of the following threats, if present: habitat loss or degradation; predators, parasites, or competitors; species-targeted taking of individual organisms or disruption of breeding activity.

(e) Does the species have highly specialized habitat, resource needs, or other ecological requirements? Is dispersal ability poor?

Conservation goals.

What specific conservation goals should be met in order to change the conservation status or to remove the species from the state list? Please address goals for any or all of the following:

(a) State distribution, number of occurrences (populations), population levels, and/or reproductive rates

(b) Amount of protected habitat and/or number of protected occurrences

(c) Management of protected habitat and/or occurrences

Literature cited, additional documentation, and comment

Taylor, P. 1989. *The Genus Utricularia: a Taxonomic Monograph*. Kew Bulletin Additional Series XIV. HMSO, London, UK.

